Phreatoicus which I have elsewhere suggested may be looked upon as an "epipodite" *.

This paper was commenced in the zoological laboratory of University College, Dundee; and I have to record my best thanks to Professor d'Arcy W. Thompson, C.B., for kind permission to make free use of his collections, and to Mr. W. T. Calman for assistance in this and other matters.

EXPLANATION OF PLATE VIII.

Fig. 1 *ant.* Outer antenna of a male specimen of *Ligia oceanica*, 25 mm. long and 12 mm. broad. × 6.
Fig. 1 *prp*^{2}. Second peræopod of the same specimen. × 9.
Fig. 2 *ant.* Outer antenna of a female specimen, 24 mm. long, 10 mm. broad (brood-pouch full of eggs). × 6.
Fig. 2 *prp*^{2}. Second peræopod of the same specimen. × 9.
Fig. 1 *plp*^{1}. First pleopod of male, posterior aspect. × 19.
Fig. 1 *plp*^{2}. Second pleopod of male, posterior aspect. × 19.

XXXII.—*A Revision of the Pierine Genus* Huphina, *with Notes on the Seasonal Phases and Descriptions of new Species.*

By Arthur G. Butler, Ph.D., F.L.S., F.Z.S., &c.

The present genus is one of the most pleasing in the subfamily Pierinæ. It is related to *Ganoris* and *Pinacopteryx*, but some of the species show apparent affinity to *Catophaga* (from which, however, the absence of the anal tuft in the males would readily serve to distinguish this sex). It separates into two well-defined groups, the first of which commences with forms resembling *Catophaga* and having well-defined seasonal phases, but terminates with forms more nearly resembling *Delias* in which seasonal phases are possibly non-existent. The second group in its colouring reminds one of *Delias*, *Catopsilia*, and *Ganoris*, but concludes with species having an under-surface colouring peculiar to this genus alone. The seasonal phases when known are less pronounced in their distinctive characters than in the earlier forms of the first group, and vary somewhat in the subgroups having the coloration of the genera above noted; those which remind one of *Delias* seem to have no defined seasonal phases.

* See Trans. Linn. Soc., Zool. ser. 2, vol. vi. part 2, pp. 195 & 203; and 'Records of the Australian Museum,' vol. i. p. 164.

Group I.

1. *Huphina inopinata.*

Belenois inopinata, Butler, Ann. & Mag. Nat. Hist. ser. 5, vol. xi. p. 389 (1883).

Wet phase, Fiji. ♂ type, ♀ ♀ (S. & G. coll.), B. M.

2. *Huphina acrisa.*

Pieris acrisa, Boisduval, Bull. Soc. Ent. France, 1859, p. clvi.
Belenois terranea, Butler, Ann. & Mag. Nat. Hist. ser. 4, vol. xx. p. 356 (1877).

Lifu, Loyalty group. Type, B. M.

H. acrisa was described from the extreme wet form of the male, in which the under surface of the wings is white. A second (perhaps later) wet form has the apex of the primaries and whole ground-colour of the secondaries sulphur-yellow. The intermediate form has the same parts sordid buff-brownish, with the dark markings less pronounced, and, finally, the dry form (*H. terranea*) has these parts earthy brown. Owing to the acquisition of five examples, including two females, in the Godman and Salvin series, we now have all the phases; previously we only possessed males of the extreme types—*H. acrisa* and *terranea*.

Tachyris maculata, Grose-Smith, seems nearly allied to this, but I have not seen the type.

3. *Huphina perimale.*

♀. *Papilio perimale*, Donovan, Ins. New Holl. pl. xx. fig. 1 (1805).
♂. *Pieris periclea*, Wallace (not Felder), Trans. Ent. Soc. ser. 3, vol. iv. p. 333 (1867).
♀. *Tachyris amarella*, Wallace, *t. c.* p. 373, pl. ix. fig. 2 (1867).

♂ ♂, ♀ ♀, New Caledonia (♀, Wallace's type). B. M.

The wet phase, with yellow under surface to secondaries, is in the Hewitson collection; *H. amarella* is the female of the intermediate phase, and typical *H. perimale*, with deep earth-brown under surface to secondaries, is the dry phase. In the females the width of the black borders above varies seasonally, being least developed in the dry form.

4. *Huphina scyllara.*

Pieris scyllara, McLeay, King's Surv. Austral., App. p. 459 (1827).
Pieris lanassa, Boisduval, Sp. Gén. Lép. i. p. 477 (1836).
Pieris nabis, Lucas, Rev. et Mag. de Zool. 1852, p. 326.
Pieris perithea, Felder, Reise der Nov., Lep. ii. p. 169 (1865).
Pieris periclea, Felder, *l. c.*
Pieris nerses, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 333, pl. vi. fig. 3 (1867).

Australia, Baudin Island, &c. Fifty-three examples, B. M.

H. scyllara is the extreme wet phase, with white under surface to the secondaries; a second wet phase has these wings pale lemon-yellow below; a third (*H. nabis*) has them bright narcissus-yellow, and a fourth (*H. lanassa*) saffron-yellow. In *H. periclea*, the intermediate phase, they are buff-brownish, and in *H. narses*, the dry phase, earthy brown. During his visits to Baudin Island Mr. J. J. Walker obtained the whole of these variations.

5. *Huphina Kühni.*

Pieris Kühni, Röber, C. B. Iris, p. 20, pl. i. figs. 2, 3 (1885).

Island of Kabia, Celebes.

Near *H. scyllara*; the black border of the male narrower, the secondaries of the female sulphur-yellow.

6. *Huphina rachel.*

Pieris rachel, Boisduval, Sp. Gén. Lép. i. p. 469 (1836).

Wet phase, Java (S. & G. coll.). ♂ ♂, B. M.

7. *Huphina discolor.*

Pieris discolor, Mathew, Trans. Ent. Soc. 1887, p. 47.

Ugi and Ulaua, Solomon group. Types, B. M.

We received this fine species from the Godman and Salvin collection.

8. *Huphina agnata.*

Pieris agnata, Grose-Smith, Ent. Month. Mag. xxv. p. 301 (1889).

Guadalcanar and Ulaua, Solomon group. B. M.

Eight examples of this species were received from the Godman and Salvin collection; it is exactly intermediate between *H. discolor* and *H. Wallaceana*, but differs from both in the absence of any subapical spot on the upper surface of the primaries.

9. *Huphina Wallaceana.*

Pieris Wallaceana, Felder, Reise der Nov., Lep. ii. p. 168 (1865).

Waigiou. ♂, B. M.

10. *Huphina pygmœa.*

Pieris pitys, var. *pygmœa*, Röber, Tijd. voor Ent. xxxiv. p. 279 (1891).

Wetter and Damma Island. ♂ ♂, B. M.

In our examples the border of the secondaries is narrower than in *H. pitys*. I believe this to be Herr Röber's species.

11. *Huphina perictione.*

Pieris perictione, Felder, Reise der Nov., Lep. ii. p. 168 (1865).

Aru.

Appears to be one of the links between *H. Wallaceana* and *H. pitys*.

12. *Huphina pitys.*

Pieris pitys, Godart, Enc. Méth. ix. p. 134 (1819); Lucas, Lep. Exot. pl. xxix. fig. 1 (1835).

Timor, Kæpang, Semao, Dili, Java. B. M.

I cannot help thinking that Herr Röber must have wrongly identified this species, confounding examples of typical *H. pitys* with his *H. pygmœa*.

13. *Huphina consanguis.*

Belenois consanguis, Butler, P. Z. S. 1883, p. 369.

Larat, Timor Laut. Type ♂, B. M.

The broader dark brown area on the primaries, with no subapical spot, the more chocolate borders, and more saffron tint of the secondaries below at once distinguish this from *H. pitys*.

14. *Huphina latilimbata.*

Belenois latilimbata, Butler, Ann. & Mag. Nat. Hist. ser. 4, vol. xviii. p. 247 (1876).

Port Moresby, New Guinea, and Darnley Island. Type, B. M.

Our series consists at present of sixteen examples.

15. *Huphina mentes.*

Pieris mentes, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 332 (1867).
Pieris synchroma, Röber, Tijd. Ent. xxxiv. p. 278; figured in xxxv. (1892).

Lombock. ♂, B. M.

Four examples are in the Hewitson collection.

16. *Huphina Smithii.*

Belenois pallida, Smith, Novit. Zool. i. p. 336 (1894).

Biak, New Guinea.

Allied to *H. latilimbata*. The name *Huphina pallida* is preoccupied.

17. *Huphina Dohertyana.*

Belenois Dohertyana, Smith, Novit. Zool. i. p. 337 (1894).

New Guinea.

18. *Huphina affinis.*

Pieris affinis, Vollenhoven, Mon. Pier. p. 40, pl. v. fig. 2 (1865).

Celebes. B. M.

19. *Huphina Boisduvaliana.*

Pieris Boisduvaliana, Felder, Wien. ent. Monatschr. vi. p. 287 (1862); Reise der Nov., Lep. ii. p. 168, pl. xxiv. fig. 8 (1865).
Huphina Semperi and *balbagona*, Semper, Reisen im Arch. Phil. v. pp. 237, 238, Taf. xxxvii. figs. 13–15, Taf. xxxviii. figs. 2, 3 (1890).

Wet form (=*H. balbagona*), ♂ ♂, ♀ ♀, Mindanao, Luzon. B. M.

Intermediate form (=*H. Semperi*), ♂ ♂, ♀ ♀, Mindanao, Davao, Luzon. B. M.

Dry form (=*H. Boisduvaliana*), ♂ ♂, Mindoro, Manilla. B. M.

We now come to a subgroup which in colouring recalls the genus *Delias*, and on that account has mostly been confounded with that genus, although its neuration proves it to belong to *Huphina*.

20. *Huphina quadricolor.*

Pieris quadricolor, Salvin and Godman, P. Z. S. 1877, p. 148, pl. xxiii. figs. 3, 4.

New Ireland, New Britain, Duke-of-York Island, and New Pomerania. Nine examples, including type, B. M.

The correct position of this species alone was recognized; the others were referred to *Delias* by various writers.

21. *Huphina curyxanthe.*

Pieris curyxanthe, Honrath, Berl. ent. Zeitschr. xxxvi. p. 435 (1892) Oberthür, Etudes d'Ent. xix. p. 6, pl. ii. figs. 7 & 9 (1894).

Port Moresby. ♂, B. M.

It would not surprise me to discover that this was the dry phase of the following species.

22. *Huphina abnormis.*

♀. *Tachyris abnormis*, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 368, pl. viii. fig. 5 (1867).

Seven specimens. ♂ ♂, Port Moresby, B. M. ♀ type, coll. Hewitson.

23. *Huphina ladas.*

Delias ladas, Grose-Smith, Novit. Zool. i. p. 585 (1894); Rhop. Exot. ii., *Del.* pl. v. figs. 4–6 (1895).

New Guinea.

Nearest to the following, but yellow at base of secondaries on under surface.

24. *Huphina ornytion.*

Pieris ornytion, Godman and Salvin, P. Z. S. 1880, p. 613, pl. lvi. fig. 5.

Seven examples. ♂ ♂, ♀ ♀, Port Moresby (including type). B. M.

25. *Huphina Dohertyi.*

Pieris Dohertyi, Oberthür, Etudes d'Ent. xix. p. 61, pl. ii. fig. 2 (1894).

New Guinea.

I must confess that the fact of the last five species occurring together in New Guinea, in conjunction with the fact that similarly coloured species of the Nymphalid genus *Mynes* occur there, is very suspicious. I cannot help thinking that breeding experiments would tend greatly to reduce the number of these "species" in both genera.

Group II.

26. *Huphina temena.*

Pieris temena, Hewitson, Exot. Butt. ii., *Pier.* pl. iii. fig. 19 (1861).

Lombock. ♂ ♂, ♀, B. M.

27. *Huphina tamar.*

Pieris tamar, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 337, pl. vi. fig. 2 (1867).

♀, Baly. Type, coll. Hewitson.

28. *Huphina julia.*

Huphina julia, Doherty, Journ. As. Soc. Beng. lx. 2, p. 187, pl. ii. fig. 12 (1891); Oberthür, Etudes, xix. pl. iii. figs. 11 & 17 (1894).

Sumba.

29. *Huphina læta.*

♂. *Pieris læta*, Hewitson, Exot. Butt. iii., *Pier.* pl. vii. figs. 45, 46 (1862); ♀. Vollenhoven, Mon. Pier. p. 31, pl. iv. fig. 3 (1865).

Timor. ♂ ♂, B. M. Type, coll. Hewitson.

30. *Huphina pactolica.*

♂. *Pieris pactolicus*, Butler, P. Z. S. 1865, p. 455, pl. xxvi fig. 1.

Seven examples, Borneo. Type, B. M.

31. *Huphina celebensis.*

Huphina celebensis, Rothschild, Deut. ent. Zeit., Lep. v. p. 439, pl. iv. figs. 1, 2 (1892).

Macassar, Celebes. Eight examples, B. M.

32. *Huphina eperia.*

Pieris eperia, Boisduval, Sp. Gén. Lép. i. p. 470 (1836).

Minahassa, Macassar, Celebes. Five examples, B. M.

In the Hewitson collection the female is regarded as that sex of *H. timnatha*.

33. *Huphina timnatha.*

♂. *Pieris timnatha*, Hewitson, Exot. Butt. iii., *Pier.* pl. vii. figs. 47, 48 (1862).

♀. *Pieris emma*, Vollenhoven, Mon. Pier. p. 24, pl. iv. fig. 2 (1865).

Pieris eurygonia?, Hopffer, Stett. ent. Zeit. 1874, p. 23.

Celebes and Batchian. Five examples, B. M.

Hopffer's type is said to have been obtained on the Togian Islands. It is described as having seven white submarginal spots on the primaries above and four on the secondaries; this is the case in some males of the present species.

34. *Huphina siamensis*, sp. n.

Nearly related to *H. lea*, larger; the males with considerably narrower black outer border to all the wings, the veins on the apical third of primaries much more narrowly black-bordered (not by any means subconfluent, as in *H. lea*); the orange patch on the secondaries much larger, but less vividly coloured: below, the black veins on the primaries are more slender and the yellow submarginal spots are much larger and more conspicuous, whilst the disk beyond the cell is of a clearer paler yellow; this is also the case in the female, which in other respects much more closely resembles that sex of *H. lea* than the males of the two species do.

Expanse of wings, ♂ 68 millim., ♀ 60 millim.

Siam, Chentaboon. ♂ ♂, ♀, B. M.

35. *Huphina lea*.

♂. *Pieris lea*, Doubleday, Ann. & Mag. Nat. Hist. xvii. p. 23 (1846).

Wet form, ♂ ♂, ♀ ♀, Moulmein, Rangoon, Perak, Singapore. B. M.

Intermediate form, ♂ ♂, various parts of Burma, Philippines. B. M.

Dry form, ♂ ♂, ♀, various parts of Burma and Pegu. B. M.

The type is our male from Moulmein incorrectly figured in Doubleday's 'Genera of Diurnal Lepidoptera' under the name of *Pieris clemanthe*.

36. *Huphina hespera*, sp. n.

Above very like *H. lea*, but the female showing scarcely a trace of the tawny flush on the secondaries; below, all the dark markings are much broader and more confluent, the apical area of the primaries being deep vinous brown, enclosing two or three white dashes beyond the cell and an imperfect submarginal series. In the wet phase nearly half the secondaries is occupied by the dark brown outer border and most of the submarginal spots are obscured; the costal border of the primaries and the subcostal and median veins are much more heavily black-bordered than in the allied species. In the dry phase the border of the secondaries is reduced to half the width. Intermediate examples also occur in which this border is slightly wider than in the extreme dry types.

Expanse of wings, ♂ ♂ 60–70 millim., ♀ 58 millim.

Sarawak, Labuan, Singapore. B. M.

Our series consists of seventeen examples. The species has probably stood in collections as *clemanthe*, which is a *Prioneris*.

37. *Huphina naomi.*

Pieris naomi, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 336 (1867).

♂ ♂, ♀, Lombock. B. M. Types, coll. Hewitson.

Var. *Huphina eirene.*

Var. *Huphina eirene*, Doherty, Journ. As. Soc. Beng. lx. 2, p. 188 (1891).

"Sumba" (*Doherty*). ♂, Sambawa. B. M.

38. *Huphina Oberthuri.*

Pieris Oberthuri, Röber, Tijd. v. Ent. xxxiv. p. 277; figured in xxxv. (1892).

"Flores" (*Röber*). ♂, Laraut. B. M.

This is very close to the preceding species, but the submarginal spots on the under surface are much larger and more continuous, the apical spots on the primaries forming a tapering yellow patch; the secondaries are also more golden, with the subcostal vein and third median branch dusky.

39. *Huphina ethel.*

Huphina ethel, Doherty, Journ. As. Soc. Beng. lx. 2, p. 29 (1891).

Engano (*Doherty*).

Nearest to *H. judith*, but the border of the secondaries below extending to the cell, as in the wet phase of *H. hespera*.

40. *Huphina judith.*

Papilio judith, Fabricius, Mant. Ins. ii. p. 22 (1787); Donovan, Ins. Ind. pl. xxvii. fig. 2 (1800).
Papilio licea?, Fabricius, *t. c.* p. 20 (1787).

Thirteen examples, Java. B. M.

The type of *P. licea* not being in existence, that species can never be identified with certainty.

41. *Huphina selma.*

Pieris selma, Weymer, Stett. ent. Zeit. xlvi. p. 269, pl. ii. fig. 5 (1885).

"Nias" (*Weymer*).

Differs from *H. judith* in its much narrower border to

secondaries; if both insects occurred in the same island, they would undoubtedly represent wet and dry phases of the same species, but there is no evidence at present that either insect varies seasonally.

42. *Huphina aspasia.*

Papilio aspasia, Stoll, Suppl. Cramer, pl. xxxiii. figs. 3, 3*c* (1790).
Pieris asterope, Godart, Enc. Méth. ix. p. 154 (1819).
Pieris jael, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 335 (1867).

Amboina, Ceram, Bouru, Sulu Archipelago. B. M.

H. jael from Bouru appears to have yellower secondaries than typical *H. aspasia*, but our examples of the latter are old and perhaps have deepened with age—a very common occurrence among the Pierinæ.

43. *Huphina olga.*

Pontia olga, Eschscholtz, in Kotzeb. Reise, iii. p. 214, pl. ix. figs. 21 *a*, *b* (1821).
Huphina imogene, Doherty, Journ. Asiat. Soc. Beng. lx. p. 188 (1892).

Batchian, Philippines, Hong-Kong. B. M.

The wet form, of which we have fourteen examples, attains a greater size, is more heavily adorned with black veins and borders, and is deeper in colouring than the dry form, of which we have eighteen examples. *H. imogene* (figured by Hombron and Jacquinot as *H. judith*) belongs to the dry phase. *H. olga* differs from *H. aspasia* in the broader borders to the secondaries.

44. *Huphina olgina.*

Pieris aspasia, var. *olgina*, Staudinger, Deut. ent. Zeit., Lep. 1889, p. 19.

Palawan. ♂♂, ♀, B. M.

Differs from *H. olga* in the clear butter-yellow of the subapical spots of the primaries and of the secondaries on the under surface. The female which we possess differs greatly, the upper surface being chiefly ashy grey, with the usual pale patches quite white.

45. *Huphina hester.*

♀. *Pieris hester*, Vollenhoven, Mon. Pier. p. 24, pl. iv. fig. 1 (1865).

Mysol and Waigiou. ♂, ♀, coll. Hewitson.
Allied to *H. olga*.

The following species, though possessing the pattern of the

preceding forms, more nearly resemble *Ganoris napi* and allies in coloration.

46. *Huphina phryne.*

Papilio phryne, Fabricius, Syst. Ent. p. 473 (1775).
Papilio evagete, Cramer, Pap. Exot. iii. pl. ccxxi. F, G (1782).
Papilio zeuxippe, Cramer, *l. c.* iv. pl. cccl xii. E, F (1782).
Papilio cassida, Fabricius, Ent. Syst., Suppl. p. 427 (1798).
Huphina pallida, Swinhoe, P. Z. S. 1885, p. 137.

India, Ceylon, and Java. B. M.

Of this species we have retained a selected series of seventy-one examples, exhibiting a range over the greater part of India. The wettest phase is *H. phryne*, of which *H. zeuxippe* is a slightly less strongly marked form; the two grade into one another, so that they can only be arbitrarily separated. The intermediate phase—*H. cassida*—is still less strongly marked, and varies from brimstone to sandy buff on the under surface of the secondaries. The extreme dry phase is *H. pallida*, in which the secondaries are uniform yellowish buff in the male, a trifle more sandy and with traces of dusky veins in the female. We thus have a perfect transition from the wettest to the driest form—from secondaries bright chrome-yellow with broad blackish veins and a discal belt of almost continuous blackish spots to those which are uniform yellowish buff. Those who oppose the publication of the ascertained facts relating to seasonal variation attempt to distinguish these gradations as different species, though in many cases it is quite fortuitous whether certain specimens shall be placed under one or the other name.

47. *Huphina hira.*

Pieris hira, Moore, P. Z. S. 1865, p. 490, pl. xxxi. fig. 17.
Pieris copia, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 340 (1867).
Appias dapha, Moore, P. Z. S. 1878, p. 838.

Burma, Tenasserim. B. M.

We have retained twenty-seven examples. *H. copia* is the wet phase and *H. hira*=*dapha* the dry; the apical border of the primaries varies, being sometimes streaked with grey or whitish, but often uniformly black.

48. *Huphina vaso.*

Huphina vaso, Doherty, Journ. As. Soc. Beng. lx. 2, p. 188 (1891); Oberthür, Études, xix. pl. iii. fig. 18 (1894).

Sambawa.

This is a dry-season phase, differing chiefly from that of the succeeding species in the more open veined borders to the wings.

49. *Huphina corva.*

Pieris corva, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 339 (1867).

Java, Bali, Sumatra. B. M.

The dry phase is usually slightly smaller than the wet and the ground-colour of the secondaries below is sandy buff instead of creamy white; the discal series of spots is also reduced in size.

50. *Huphina dissimilis.*

Huphina dissimilis, Rothschild, Deut. ent. Zeit., Lep. v. p. 440, pl. v. figs. 5, 6 (1892).

Celebes.

Very like the dry phase of *H. corva*.

51. *Huphina lichenosa.*

Pieris lichenosa, Moore, P. Z. S. 1877, p. 591.

Andamans. B. M.

52. *Huphina sumatrana*, sp. n.

An insular representative of *H. nerissa*; the male of the wet phase differs in its slightly inferior size, the absence of the blackish bar connecting veins 1 and 2 on the primaries; on the under surface the apical area of the primaries and ground-colour of the secondaries saffron instead of primrose-yellow, the veins gravel-brown excepting the median vein of the primaries and the borders of the veins below it, which are dark brown inclining to black.

Expanse of wings 61 millim.

♂, Sumatra (from G. & S. coll.). B. M.

53. *Huphina nerissa.*

♂. *Papilio nerissa*, Fabricius, Syst. Ent. p. 471 (1775).
♂. *Papilio amasene*, Cramer, Pap. Exot. i. pl. xliv. A (1776).
♀. *Papilio coronis*, Cramer, *t. c.* B, C (1776).

Nepal, Darjeeling, Tonkin, China. B. M.

We have twenty-five selected examples of this species. The dry phase has the under surface of the secondaries pale creamy buff, with sandy-greyish veins and spots.

The following subgroup contains species in which the sexes differ somewhat in the manner of *Phrissura ægis* in their upper-surface pattern, but on the under surface they show a good deal of olive-green colouring in their wet and intermediate phases. I know of no other Pierinæ which at all closely resemble them.

54. *Huphina nadina.*

♂. *Pieris nadina*, Lucas, Rev. et Mag. de Zool. 1852, p. 333.
♂ ♀. *Pieris nama*, Moore, Cat. Lep. E. I. C. i. p. 76 (1857); P. Z. S. 1857, p. 102, pl. xliv. figs. 1, 2.
♂. *Pieris amba*, Wallace, Trans. Ent. Soc. ser. 3, vol. iv. p. 340 (1867).
Appias amboides, Moore, Journ. As. Soc. Beng. liii. p. 46 (1884).

Darjeeling, Silhet, Assam, Munipur, Pegu, Tenasserim, Burma. Seventeen examples, B. M.

H. nadina was described from a male of the wet phase and a female of *Appias zelmira*, *H. nama* from a male of the intermediate and a female of the wet phase, *H. amba* and *amboides* from males of the dry phase. *H. amboides* differs from *H. amba* in the absence of the sandy-brown discal band on the under surface of the secondaries; as it occurs in the same localities as the typical phases of the species, it is not likely to be more than an extreme development of the dry form.

55. *Huphina Andersoni.*

Appias Andersoni, Distant, Ent. xviii. p. 146 (1885); Rhop. Mal. pl. xxxiii. fig. 2.

Perak.

Allied to the preceding species, but the apex of the primaries and the secondaries below rich golden yellowish.

56. *Huphina andamana.*

Huphina nama, var. *andamana*, Swinhoe, P. Z. S. 1889, p. 398.

Andamans. Twelve examples, B. M.

The intermediate phase differs from the wet in the much browner coloration of the apex of the primaries and the secondaries below, the spot in the centre of the latter wings white instead of canary-yellow; in the dry phase there is scarcely any yellow left upon the under surface and the apex of primaries and secondaries are paler and greyer; the outer border of the primaries above is also slightly narrower.

57. *Huphina Fawcetti*, sp. n.

Represents the preceding species in Sumatra: the wet

phase is darker olivaceous below, with a smaller and white spot crossed by vein 5; the intermediate phase does not, however, differ in the same way from the corresponding phase of *H. andamana*, so that I am not certain of the constancy of this difference. On the upper surface the outer border extends further on to the costal margin of the primaries than in *H. andamana* and is considerably broader, black, and sharply defined from veins 3 to 7 on the secondaries.

Sumatra (*Fawcett* and *Sachs*). Two males, B. M.

58. *Huphina remba.*

Pieris remba, Moore, Cat. Lep. E. I. C. i. p. 75 (1857).
Huphina liquida, Swinhoe, Ann. & Mag. Nat. Hist. ser. 6, vol. v. p. 361 (1890).

Mussourie, Mahableshwar, Mysore, Canara, Ceylon. B. M.

H. liquida is a male of the wet phase; the type is a male of the intermediate phase, rather browner below than Col. Swinhoe's type; and "*H. liquida* ♀" is a male of the dry phase, in which the apex of the primaries and the secondaries become sandy greyish.

The preceding species lead on naturally to *Udaina cynis*, in which the wet phase (*U. Pryeri*, Dist.) has the basal area of the secondaries and a slender bar crossing the cell on the under surface olivaceous. Although hitherto we have not received this phase from Malacca, we have the intermediate phase, in which the basal area of the secondaries is grey below, from Malacca, and we have the extreme dry phase (*U. cynis*) in the Hewitson collection from Borneo. I therefore have not the least doubt of the specific identity of the two forms. It is possible, as I have already suggested, that this species may be the true *Papilio monuste* of Linnæus; but, as the type is lost, this point can never be definitely settled.

XXXIII.—*List of Fishes collected during the Peary Auxiliary Expedition*, 1894. By Otto Holmqvist, of the Zoological Institute, Lund, Sweden.

The Peary Auxiliary Expedition offered but few opportunities for collecting sea-animals. Dr. A. Ohlin, the zoologist of the expedition, mentions * only seven trawling-stations,

* "Zoological Observations during the Peary Auxiliary Expedition,